CLAIMS

What is claimed is:

1. A searching method for a Security Policy Database comprising:

building a peer table;

building a set of peer-based Security Policy Database composed of a plurality of peer-based Security Policy Databases;

searching the peer table so as to obtain a corresponding peer-based Security Policy Database; and

searching the corresponding peer-based Security Policy Database so as to obtain a security policy.

2. The searching method of claim 1, wherein the step of building a peer table further comprises the step of building at least two data in the peer table according to a peer gateway; according to one set of peer gateway, at least two sets of data are built in the peer table.

3. The searching method of claim 2, wherein one of the two data is an internal network/local area network (LAN) data, the other is an external network/wide area network (WAN) data; one of the two sets of data is a set of internal network/local area network (LAN) data and the other is a set of external network/wide area network (WAN) data.

4. The searching method of claim 3, wherein each of the internal network/local area network (LAN) data and the external network/wide area network (WAN) data comprises a peer identification, an address, a type and a prefix; the peer identification represents the peer gateway; the address is a network address; the type is an internal network/local area network (LAN) section type, an external network/wide area network (WAN) address type or

both; the prefix is the number of the bits for comparing the address.

5. The searching method of claim 4, the address included in the internal network/local area network (LAN) data is an internal network/local area network (LAN) section.

6. The searching method of claim 4, the address included in the external network/wide area network (WAN) data is an external network/wide area network (WAN) address.

7. The searching method of claim 1, wherein the step of building a peer table further comprises the step of building data in the peer table according to a default peer gateway; the data comprises a peer identification; an address, a type and a prefix; the peer identification is 0, the address is 0, the type is B, and the prefix is 0.

8. The searching method of claim 1, wherein the step of building a set of peer-based Security Policy Database further comprises the step of building a peer-based Security Policy Database according to a peer gateway for storing a security policy relating to the peer gateway; according to a plurality of peer gateways, a plurality of peer-based Security Policy Databases are built.

9. The searching method of claim 1, wherein the step of building a set of peer-based Security Policy Database further comprises a step of building a default peer-based Security Policy Database according to a default peer gateway for storing the security policy relating to the default peer gateway.

10. The searching method of claim 8, wherein the step of building the peer-based Security Policy Database according to a peer gateway is according to a selector of a security policy, and the selector is a source address or a destination address.

11. The searching method of claim 9, the security policy relating to the default peer gateway is a by-pass security policy or a discard security policy.

12. The searching method of claim 1, wherein step of building a set of peer-based Security Policy Database further comprises a method for adding-in a security policy, the method comprises:

adding the security policy in the set of peer-based Security Policy Database according to a selector.

13. The searching method of claim 12, wherein the selector is a source address or destination address.

14. The searching method of claim 1, wherein the step of building a set of peer-based Security Policy Database further comprises a method for deleting a security policy, the method comprises:

deleting the security policy from the set of peer-based Security Policy Database according to a selector.

15. The searching method of claim 14, wherein the selector is a source address or destination address.

16. The searching method of claim 1, wherein the step of searching the peer table further comprises a step of comparing a packet and the peer table.

17. The searching method of claim 16, wherein the packet is an inbound IPSec packet in tunnel mode; the comparing step is used for comparing the source address of the outer header of the inbound IPSec packet in tunnel mode and the external network/wide area network (WAN) address of the peer table.

18. The searching method of claim 16, wherein the packet is an inbound IPSec packet in transport mode; the comparing step is used for comparing the source address of the inbound IPSec packet in transport mode and the external network/wide area network (WAN) address of the peer table.

19. The searching method of claim 16, wherein the packet is an inbound IP packet; the comparing step is used for comparing the source address of the inbound IP packet with the internal network/local area network (LAN) section of the peer table.

20. The searching method of claim 16, wherein the packet is an outbound IP packet; the comparing step is used for comparing the destination address of the outbound IP packet with the internal network/local area network (LAN) section of the peer table.

21. The searching method of claim 1, wherein the step of searching the peer-based Security Policy Database comprises a step for comparing a packet and the peer-based Security Policy Database.

22. The searching method of claim 21, wherein the packet is an inbound IPSec packet in tunnel mode; the comparing step is used for comparing the inner header of the inbound IPSec packet in tunnel mode with the selector of the security policy of the peer-based Security Policy Database.

23. The searching method of claim 21, wherein the packet is an inbound IPSec packet in transport model; the comparing step is used for comparing the header of the inbound IPSec packet in transport mode with the selector of the security policy of the peer-based Security Policy Database.

24. The searching method of claim 21, wherein the packet is an inbound IP packet; the comparing step is used for comparing the header of the inbound IP packet with the selector of the security policy of the peer-based Security Policy Database.

25. The searching method of claim 21, wherein the packet is an outbound IP packet; the comparing step is used for comparing the header of the outbound IP packet with the selector of the security policy of the peer-based

Security Policy Database.